M8201R Fibre Channel to SCSI Router Installation and User's Guide

Abstract

This guide describes how to install and configure the Fibre Channel to SCSI router with a Fibre Channel ServerNet adapter (FCSA) on an HP Integrity NonStop™ NS-series server.

Product Version

N.A.

Supported Release Version Updates (RVUs)

This guide supports H06.11 and all subsequent H-series RVUs until otherwise indicated by its replacement publication.

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M8201R Fibre Channel to SCSI Router Installation and User's Guide

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What’s New in This Manual

Manual Information

Abstract

This guide describes how to install and configure the Fibre Channel to SCSI router with a Fibre Channel ServerNet adapter (FCSA) on an HP Integrity NonStop™ NS-series server.

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New and Changed Information

This manual is new.

About This Manual

Notation Conventions

Hypertext Links

Blue underline is used to indicate a hypertext link within text. By clicking a passage of text with a blue underline, you are taken to the location described. For example:

> This requirement is described under Backup DAM Volumes and Physical Disk Drives on page 3-2.

General Syntax Notation

This list summarizes the notation conventions for syntax presentation in this manual.

UPPERCASE LETTERS. Uppercase letters indicate keywords and reserved words. Type these items exactly as shown. Items not enclosed in brackets are required. For example:

```
MAXATTACH
```

lowercase italic letters. Lowercase italic letters indicate variable items that you supply. Items not enclosed in brackets are required. For example:

```
file-name
```

computer type. `Computer type` letters within text indicate C and Open System Services (OSS) keywords and reserved words. Type these items exactly as shown. Items not enclosed in brackets are required. For example:

```
myfile.c
```

italic computer type. *`Italic computer type`* letters within text indicate C and Open System Services (OSS) variable items that you supply. Items not enclosed in brackets are required. For example:

```
pathname
```

[ ] Brackets. Brackets enclose optional syntax items. For example:

```
TERM [\system-name.]$terminal-name
```

```
INT[ERRUPTS]
```

A group of items enclosed in brackets is a list from which you can choose one item or none. The items in the list can be arranged either vertically, with aligned brackets on

each side of the list, or horizontally, enclosed in a pair of brackets and separated by vertical lines. For example:

```
FC [ num  ]
   [ -num ]
   [ text ]

K [ X | D ] address
```

{ } Braces. A group of items enclosed in braces is a list from which you are required to choose one item. The items in the list can be arranged either vertically, with aligned braces on each side of the list, or horizontally, enclosed in a pair of braces and separated by vertical lines. For example:

```
LISTOPENS PROCESS { $appl-mgr-name }
                  { $process-name  }

ALLOWSU { ON | OFF }
```

| Vertical Line. A vertical line separates alternatives in a horizontal list that is enclosed in brackets or braces. For example:

```
INSPECT { OFF | ON | SAVEABEND }
```

… Ellipsis. An ellipsis immediately following a pair of brackets or braces indicates that you can repeat the enclosed sequence of syntax items any number of times. For example:

```
M address [ , new-value ]...

[ - ] {0|1|2|3|4|5|6|7|8|9}...
```

An ellipsis immediately following a single syntax item indicates that you can repeat that syntax item any number of times. For example:

```
"s-char..."
```

Punctuation. Parentheses, commas, semicolons, and other symbols not previously described must be typed as shown. For example:

```
error := NEXTFILENAME ( file-name ) ;

LISTOPENS SU $process-name.#su-name
```

Quotation marks around a symbol such as a bracket or brace indicate the symbol is a required character that you must type as shown. For example:

```
"[" repetition-constant-list "]"
```

Item Spacing. Spaces shown between items are required unless one of the items is a punctuation symbol such as a parenthesis or a comma. For example:

```
CALL STEPMOM ( process-id ) ;
```

If there is no space between two items, spaces are not permitted. In this example, no spaces are permitted between the period and any other items:

```
$process-name.#su-name
```

Line Spacing. If the syntax of a command is too long to fit on a single line, each continuation line is indented three spaces and is separated from the preceding line by a blank line. This spacing distinguishes items in a continuation line from items in a vertical list of selections. For example:

```
ALTER [ / OUT file-spec / ] LINE

   [ , attribute-spec ]...
```

!i and !o. In procedure calls, the !i notation follows an input parameter (one that passes data to the called procedure); the !o notation follows an output parameter (one that returns data to the calling program). For example:

```
CALL CHECKRESIZESEGMENT (  segment-id                    !i
                         , error        ) ;              !o
```

!i,o. In procedure calls, the !i,o notation follows an input/output parameter (one that both passes data to the called procedure and returns data to the calling program). For example:

```
error := COMPRESSEDIT ( filenum ) ;                      !i,o
```

!i:i. In procedure calls, the !i:i notation follows an input string parameter that has a corresponding parameter specifying the length of the string in bytes. For example:

```
error := FILENAME_COMPARE_ (  filename1:length           !i:i
                            , filename2:length ) ;       !i:i
```

!o:i. In procedure calls, the !o:i notation follows an output buffer parameter that has a corresponding input parameter specifying the maximum length of the output buffer in bytes. For example:

```
error := FILE_GETINFO_ (  filenum                        !i
                        , [ filename:maxlen ] ) ;        !o:i
```

Notation for Messages

This list summarizes the notation conventions for the presentation of displayed messages in this manual.

Bold Text. Bold text in an example indicates user input typed at the terminal. For example:

```
ENTER RUN CODE

?123

CODE RECEIVED:      123.00
```

The user must press the Return key after typing the input.

Nonitalic text. Nonitalic letters, numbers, and punctuation indicate text that is displayed or returned exactly as shown. For example:

```
Backup Up.
```

lowercase italic letters. Lowercase italic letters indicate variable items whose values are displayed or returned. For example:

p-register

process-name

[ ] Brackets. Brackets enclose items that are sometimes, but not always, displayed. For example:

```
Event number = number [ Subject = first-subject-value ]
```

A group of items enclosed in brackets is a list of all possible items that can be displayed, of which one or none might actually be displayed. The items in the list can be arranged either vertically, with aligned brackets on each side of the list, or horizontally, enclosed in a pair of brackets and separated by vertical lines. For example:

```
proc-name trapped [ in SQL | in SQL file system ]
```

{ } Braces. A group of items enclosed in braces is a list of all possible items that can be displayed, of which one is actually displayed. The items in the list can be arranged either vertically, with aligned braces on each side of the list, or horizontally, enclosed in a pair of braces and separated by vertical lines. For example:

```
obj-type obj-name state changed to state, caused by
{ Object | Operator | Service }
```

```
process-name State changed from old-objstate to objstate
{ Operator Request. }
{ Unknown.          }
```

| Vertical Line. A vertical line separates alternatives in a horizontal list that is enclosed in brackets or braces. For example:

```
Transfer status: { OK | Failed }
```

% Percent Sign. A percent sign precedes a number that is not in decimal notation. The % notation precedes an octal number. The %B notation precedes a binary number. The %H notation precedes a hexadecimal number. For example:

```
%005400
```

```
%B101111
```

```
%H2F
```

```
P=%p-register E=%e-register
```

Notation for Management Programming Interfaces

This list summarizes the notation conventions used in the boxed descriptions of programmatic commands, event messages, and error lists in this manual.

UPPERCASE LETTERS. Uppercase letters indicate names from definition files. Type these names exactly as shown. For example:

```
ZCOM-TKN-SUBJ-SERV
```

lowercase letters. Words in lowercase letters are words that are part of the notation, including Data Definition Language (DDL) keywords. For example:

```
token-type
```

!r. The !r notation following a token or field name indicates that the token or field is required. For example:

```
ZCOM-TKN-OBJNAME      token-type ZSPI-TYP-STRING.          !r
```

!o. The !o notation following a token or field name indicates that the token or field is optional. For example:

```
ZSPI-TKN-MANAGER      token-type ZSPI-TYP-FNAME32.         !o
```

Change Bar Notation

Change bars are used to indicate substantive differences between this manual and its preceding version. Change bars are vertical rules placed in the right margin of changed portions of text, figures, tables, examples, and so on. Change bars highlight new or revised information. For example:

> The message types specified in the REPORT clause are different in the COBOL environment and the Common Run-Time Environment (CRE).
>
> The CRE has many new message types and some new message type codes for old message types. In the CRE, the message type SYSTEM includes all messages except LOGICAL-CLOSE and LOGICAL-OPEN.

1

Overview of the Fibre Channel to SCSI Router

This section includes:

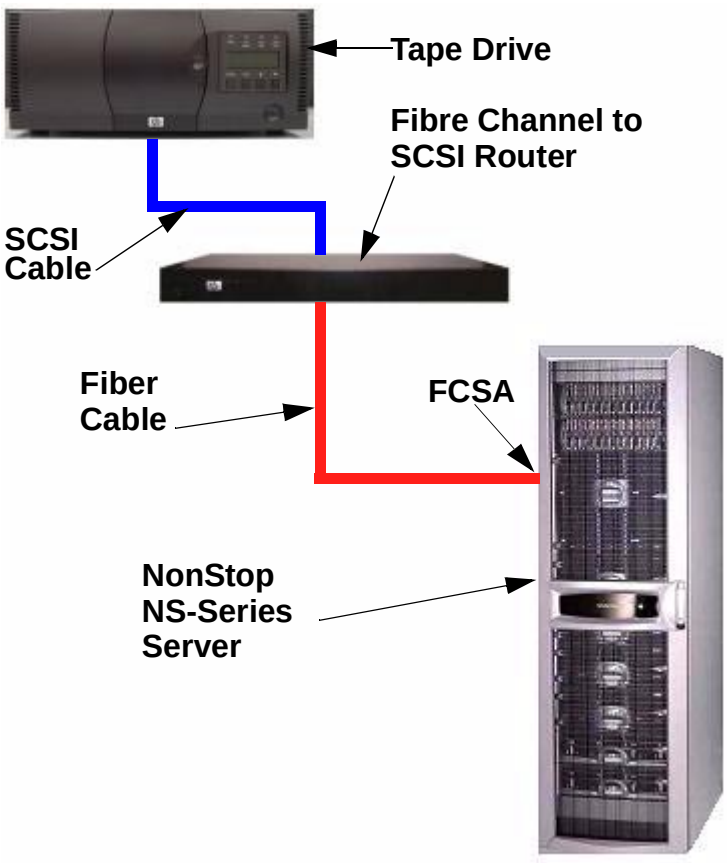
Fibre Channel to SCSI Router 1-1

Fibre Channel to SCSI Router

The Fibre Channel to SCSI router is a fast, reliable data transport system that allows simultaneous communications between NonStop NS-series servers and data storage devices. The Fibre Channel to SCSI router has an integrated power supply. The Fibre Channel to SCSI router connects a supported storage device to the Fibre Channel ServerNet adapter (FCSA) on a NonStop NS-series server.

Figure 1-1 shows a Fibre Channel to SCSI Router connecting a tape drive to the Fibre Channel ServerNet adapter (FCSA) on a NonStop NS-series server.

Figure 1-1. Hardware Configuration



High Performance for Faster Backups

Support for 2 gigabits/second Fibre Channel enables significantly faster tape reads and writes, which in turn speed operations for backup and restore. The Fibre Channel to SCSI router backups and restores existing data in significantly less time or increasingly larger data sets within the customers' current backup window.

Supported Storage Devices

The Fibre Channel to SCSI router can be configured with one of these storage devices:

- CTL700 tape library
- N152xA tape drive
- CT9840-x tape drives
- 525x tape drives
- 524x tape drives
- 524x ACL tape drives

Note. The Fibre Channel to SCSI router requires a firmware upgrade when it is used to connect a N1528A, N1529A, or N1523A tape drive to a NonStop NS-series server.

Data Connections

The Fibre Channel to SCSI router has two types of data connections:

- A SCSI High Voltage Differential (HVD) port that connects to a supported storage device
- A Fibre Channel port that connects to the Fibre Channel ServerNet adapter (FCSA) on a NonStop NS-series server

SCSI Ports

The Fibre Channel to SCSI router has two Narrow/Wide Fast/Ultra-3 SCSI buses. Both are Ultra SCSI for data transfer up to 40 megabytes/second per HVD bus.

Fibre Channel Port

The Fibre Channel to SCSI router has a 2 gigabits/second Fibre Channel port and maximum throughput of 160 megabytes/second.

Power Requirements and Physical Specifications

For the power requirements and physical specifications for the Fibre Channel to SCSI router, refer to Appendix A, Product Specifications.

2 Getting Started

This section includes:

Location	2-1
Unpacking the Box	2-1
Mounting the Fibre Channel to SCSI Router on a Desktop	2-2
Mounting the Fibre Channel to SCSI Router in a Rack	2-2

This section describes how to install the Fibre Channel to SCSI router and what to consider when unpacking the unit for the first time. The Fibre Channel to SCSI router can be set up as either on a desktop or in a rack.

Before physically installing the Fibre Channel to SCSI router, consider carefully the location for the unit installation, the intended use of the unit, and the type of devices to which the unit will be attached.

△ **Caution.** When installing the Fibre Channel to SCSI router, use only the screws and other hardware provided in the shipping container for the router. Using alternate hardware might cause damage to the unit.

Location

The Fibre Channel to SCSI router can be placed on a desktop or mounted in a 19-inch rack depending on the specific requirements of the installation.

The operating environment should meet the requirements listed in Physical Specifications. If you plan to use the Fibre Channel to SCSI router on a desk top, attach the stick-on feet to the bottom of the unit.

Note. The Fibre Channel to SCSI router has cooling fans mounted inside the enclosure and air intake vents on the front of the enclosure. The rear exhaust vents and the front intake vents should remain clear of obstructions to ensure proper air flow.

Unpacking the Box

Unpack the shipping container of the Fibre Channel to SCSI router in an area clear of any clutter:

1. Remove all items from the shipping container. Check each item for any damage. Keep the Fibre Channel to SCSI router in the protective bag until you are ready to install it.
2. Make sure you received all the equipment you ordered. If an item is missing, contact your sales representative immediately.

Mounting the Fibre Channel to SCSI Router on a Desktop

To mount the Fibre Channel to SCSI router on a desktop:

1. Remove the Fibre Channel to SCSI router from the protective bag.
2. Attach the stick-on feet to the bottom of the unit.
3. Place the Fibre Channel to SCSI router on the table or desktop.

Mounting the Fibre Channel to SCSI Router in a Rack

Two methods are available to install the Fibre Channel to SCSI router in a rack, one method using ear brackets and the other using rails. Before beginning installation, review the installation procedures appropriate for the mounting materials included in the shipping container of the product you received. When familiar with the installation procedure, follow the steps indicated to mount the Fibre Channel to SCSI router into a 19-inch rack using these provided mounting materials:

- One Fibre Channel to SCSI router
- Two ear brackets (or two slides rails with two extension brackets)
- A bag of mounting screws (eight #M6x12 Phillips screws and four #6-32x.312 Phillips screws)

Required Tools

Phillips screwdriver (#2 size)

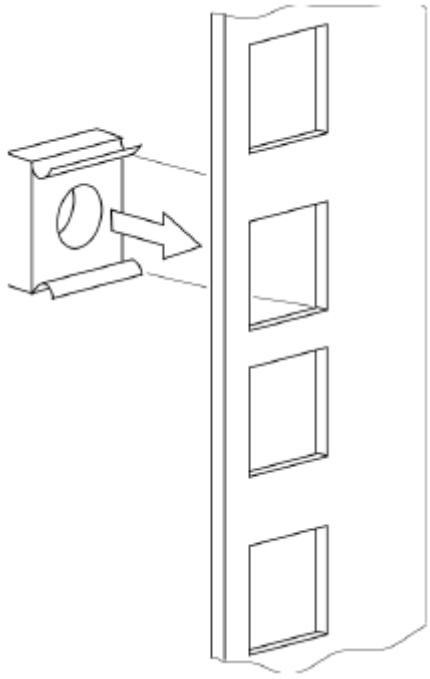
Installation Procedure With Ear Brackets

1. Remove the Fibre Channel to SCSI router from the protective bag.
2. Determine where the Fibre Channel to SCSI router should be mounted.
3. Remove any blanking panels and other equipment from the chosen rack location.

Note. To ensure proper airflow, place the Fibre Channel to SCSI router so the intake and exhaust vents remain clear of obstructions.

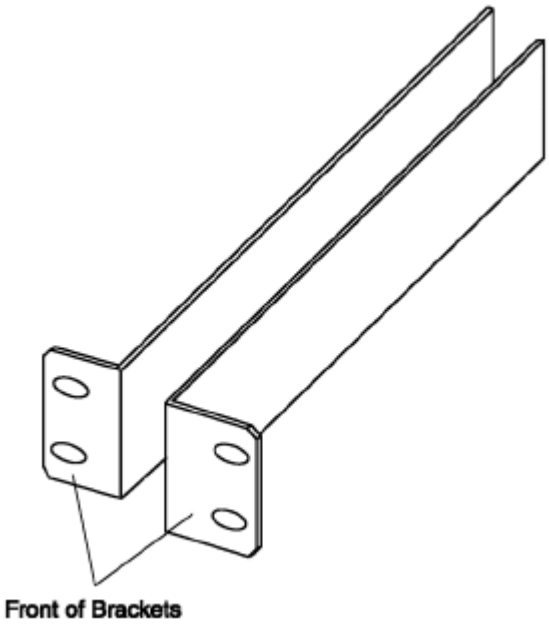
4. Install the cage nuts on the vertical mounting rails of the rack cabinet, as shown in Figure 2-1.

Figure 2-1. Installing Cage Nuts



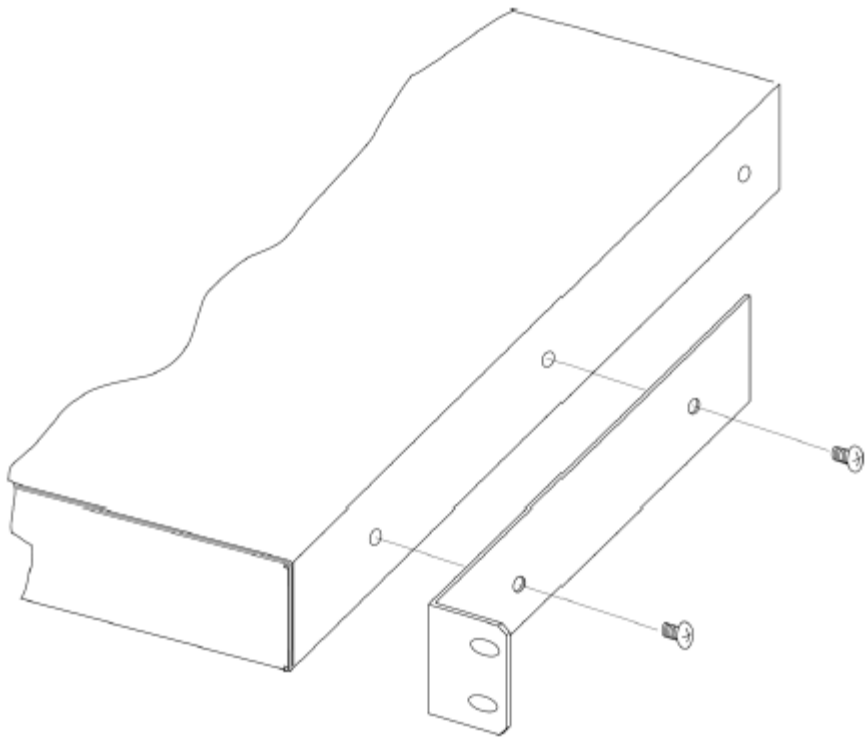
5. Locate the front of the ear brackets, as shown in Figure 2-2.

Figure 2-2. Locating Front of Ear Brackets



6. Attach the ear brackets to the Fibre Channel to SCSI router, using two of the #6-32x.312 Phillips screws on each side as shown in Figure 2-3 on page 2-5. Position the front of each bracket next to the end of the Fibre Channel to SCSI router that will be facing out of the rack.
7. Tighten the screws securely.

Figure 2-3. Attaching Ear Brackets



8. If you are mounting the Fibre Channel to SCSI router in the rack with the ports facing inside the rack (shown in Figure 2-4 on page 2-6) or with the ports facing outside the rack (shown in Figure 2-5 on page 2-7), attach the front of the mounting brackets to the rack using two of the #M6x12 Phillips screws for the front of each ear bracket. Tighten the screws securely.

▲ **WARNING.** To reduce injury or equipment damage, the mounting brackets must be level. If the brackets are not level, the Fibre Channel to SCSI router cannot be installed correctly.

Figure 2-4. Mounting at Front of Rack

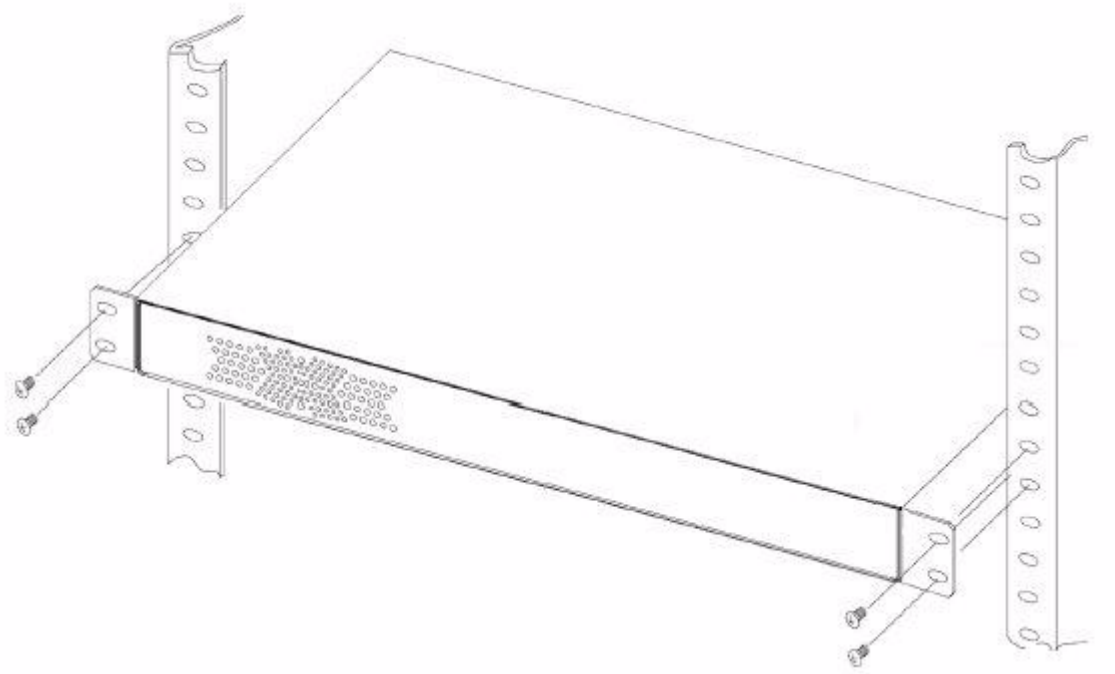
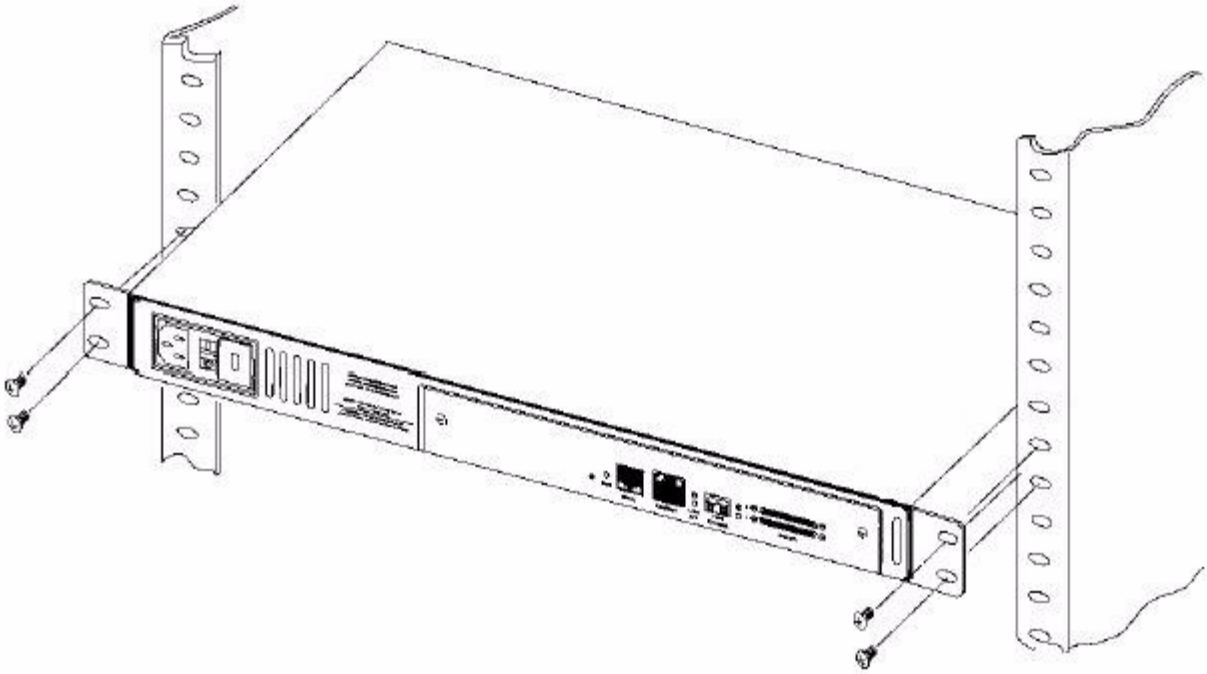


Figure 2-5. Mounting at Back of Rack



3

Installing the Fibre Channel to SCSI Router for the NonStop NS-Series Server

This section includes:

Installation 3-1

Installation

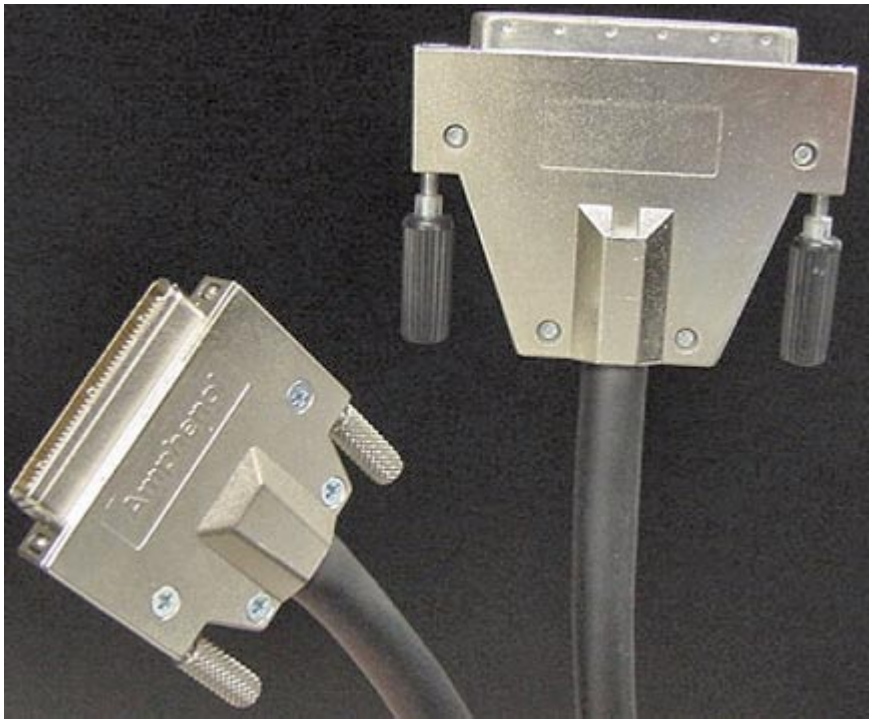
1. Connect the small end of the SCSI cable to the Fibre Channel to SCSI router on port 0. For the port location, see Figure 3-3 on page 3-3.

Note. In this example port 0 is being used to connect the tape drive. Both ports on the Fibre Channel to SCSI router are available for use if needed.

Table 3-1. SCSI Cable Part Numbers and Descriptions

Product Number	Part Number	Description
520-001	529794-001	CBA, 1 meter, VHDCI 68P to HD 68P, HVD SCSI Cable
520-003	529795-001	CBA, 3 meter, VHDCI 68P to HD 68P, HVD SCSI Cable
520-010	529796-001	CBA, 10 meter, VHDCI 68P to HD 68P, HVD SCSI Cable
520-015	529797-001	CBA, 15 meter, VHDCI 68P to HD 68P, HVD SCSI Cable
520-020	529798-001	CBA, 20 meter, VHDCI 68P to HD 68P, HVD SCSI Cable
520-023	529799-001	CBA, 23 meter, VHDCI 68P to HD 68P, HVD SCSI Cable

Figure 3-1. SCSI Cable



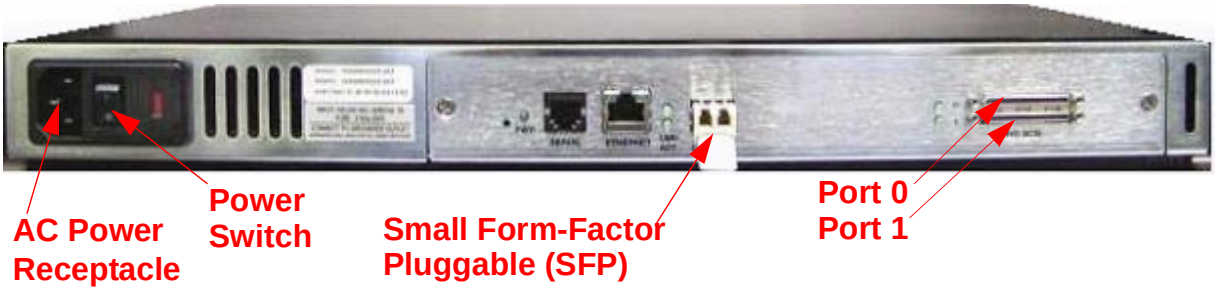
2. Tighten the screws by hand to secure the cable to the unit. Do not use a screwdriver.

3. Connect one end of the fiber cable to the small form-factor pluggable (SFP) on the unit. See Figure 3-3 for the location.
4. Attach the power cord to the AC power receptacle on the Fibre Channel to SCSI router. See Figure 3-3 for the location. Then plug the other end into an AC power outlet.

Note. The router does not have protection against lightning surges. Customers in high risk areas should use external surge protection rated for use in their location and be able to handle the power demand of the router.

Figure 3-2. Front View of the Fibre Channel to SCSI Router

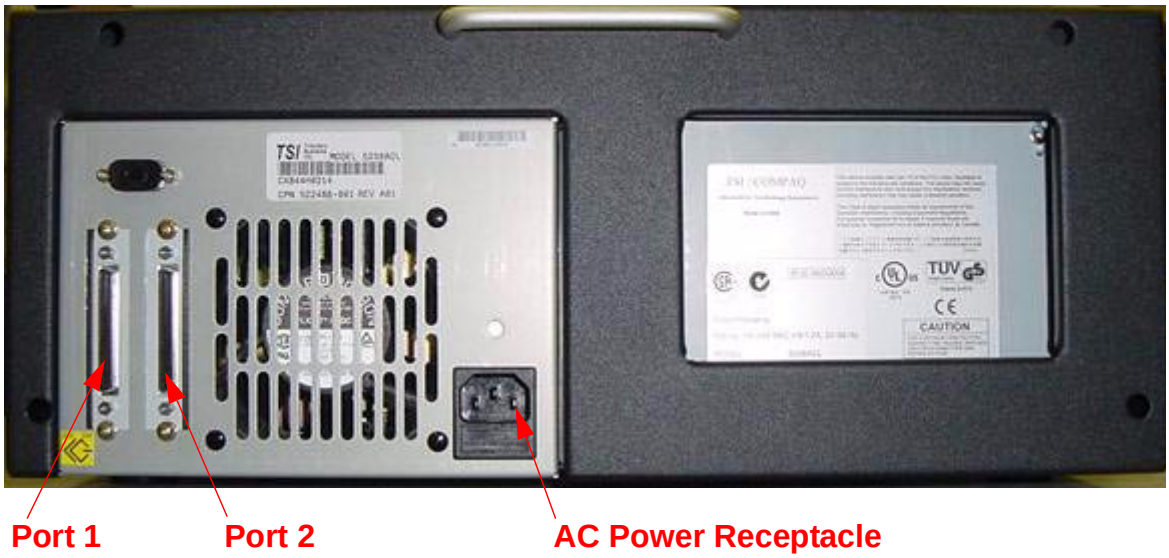
Figure 3-3. Rear View of the Fibre Channel to SCSI Router



5. Connect the larger end of the SCSI cable to SCSI port 1 on the rear panel of the tape drive. See Figure 3-5 for the location.

Figure 3-4. Front View of the Tape Drive

Figure 3-5. Rear View of the Tape Drive



Note. Tape drives are preconfigured to SCSI ID 5.

6. Tighten the screws by hand to secure the cable to the unit. Do not use a screwdriver.
7. Connect the supplied differential terminator to SCSI port 2. See Figure 3-5 on page 3-4 for the location.
8. Tighten the screws by hand to secure the terminator to the tape drive. Do not use a screwdriver.
9. Attach the power cord to the AC power receptacle on the tape drive. See Figure 3-5 for the location. Then plug the other end into an AC power outlet.

Note. The tape drive does not have protection against lightning surges. Customers in high risk areas should use external surge protection rated for use in their location and be able to handle the power demand of the tape drive.

---

10. Connect the other end of the fiber cable to the Fibre Channel ServerNet adapter (FCSA) on the NonStop NS-series server. For the location of the FCSA, see Figure 3-6 on page 3-6.

Figure 3-6. View of Two FCSAs at the Rear of Server

The fiber cable is a multimode/short wave fiber-optic cable. This cable is normally an orange color.

Table 3-2. Fiber Cables

Connector	Fiber Cable	Fiber Cable Distance
LC - LC	50/125 µm	2-300 meters (6.56-984.25 feet)
LC - LC	62.5/125 µm	3-150 meters (9.84-492.13 feet)

11. Power on the tape drive. For the power switch location, see Figure 3-4 on page 3-4. Then wait for it to perform its power-on-self-test (POST).
12. Power on the router, and then wait for it to perform its power-on-self-test (POST).

4

Configuring the Fibre Channel to SCSI Router for the NonStop NS-Series Server

This section includes:

Configuration 4-1

Configuration

1. In SCF, issue this command:

```
SCF> ADD TAPE $tape, SENDTO STORAGE, LOCATION (group, module,
slot), SAC sac-id, PORTNAME 64-bit-portname, LUN lun-id
```

   Example:

```
SCF> ADD TAPE $TAPE1, SENDTO STORAGE, LOCATION (110,2,3), SAC
1, PORTNAME 100000E00C00F000, LUN 1
```

Note. The LUN (logical unit number) in SCF should be 1 for the tape drive that is on bus 0 and 3 for the tape drive that is on bus 1.

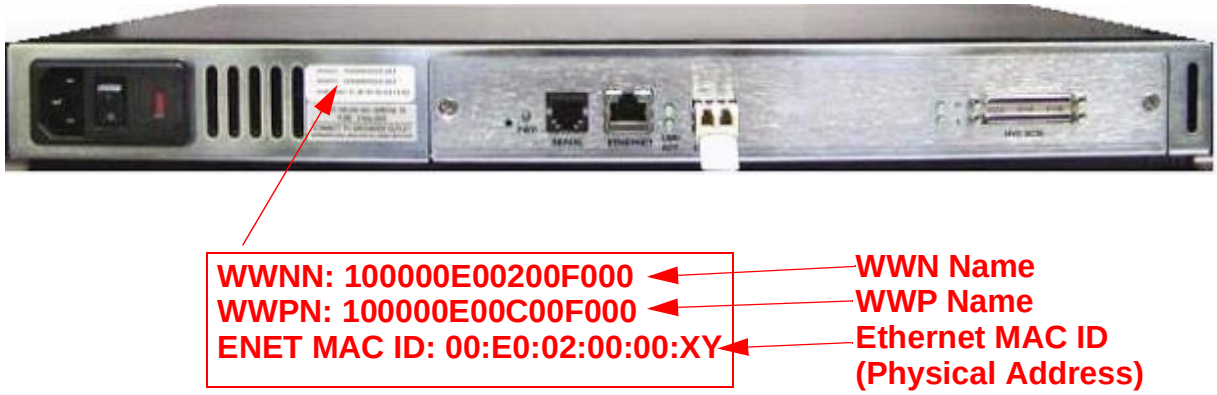
Note. PORTNAME in SCF corresponds to the WWP name of the router. This name is located on the back of the device.

The Fibre Channel to SCSI router can also be connected to a tape library. Table 4-1 shows the SCSI ID, router port number, and the LUN address for a tape library and a tape drive.

Table 4-1. LUN Mapping Table for the Fibre Channel to SCSI Router

DEVICE	SCSI ID	Router PORT	LUN ADDRESS
Tape library	3	0	LUN 0
Tape drive	5	0	LUN 1
Tape library	3	1	LUN 2
Tape drive	5	1	LUN 3

Figure 4-1. Rear View of the Fibre Channel Router



Note. WWN stands for worldwide name.

Note. WWP stands for worldwide port.

2. To start the tape drive on the server, issue this command in SCF:

   ```
   SCF> START TAPE $tape
   ```

   Example:

   ```
   SCF> START TAPE $TAPE1
   ```

For complete details about the ADD and START commands, including command syntax, see the *SCF Reference Manual for the Storage Subsystem.*

5

Troubleshooting the Fibre Channel to SCSI Router

This section includes:

Visual Inspection	5-1
Technical Support	5-1
Indicators	5-2

This section guides the user through some of the basic methods of identifying faults in the setup and configuration of the unit.

Most problems occur in the initial installation. In general, it is wise to check all connections and review the configuration before proceeding with further trouble analysis. Simplify the installation if possible, reducing it to the most basic configuration. Then add elements one at a time and verify the operation at each step.

Visual Inspection

To assure that the installation of the Fibre Channel to SCSI router has been completed correctly:

1. Check that all devices are powered up.
2. Check that all cords are plugged in tightly, and there are no bent pins.
3. Check the LEDs. No amber lights should be illuminated.
4. Check the fiber cables to ensure the connectors are properly installed between the Fibre Channel to SCSI router and the server.
5. Check that each device has the correct SCSI ID.

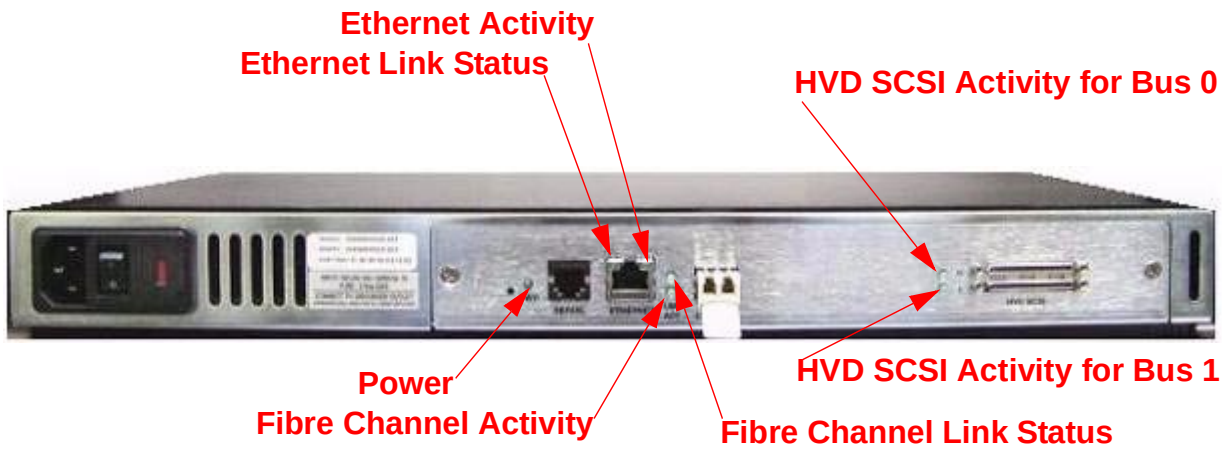
Technical Support

If the Fibre Channel to SCSI router is not functioning properly, contact your service provider.

Indicators

The Fibre Channel to SCSI router is equipped with rear panel LED indicators for monitoring overall unit status.

Figure 5-1. LED Indicators



The Fibre Channel to SCSI router has these LEDs:

- Power and Fault (Pwr)—This indicator is a bicolor LED. When green, this indicator shows that power is currently active. Lack of power indication suggests that the unit is turned off, a problem occurred with the power supplied to the unit, or an internal problem occurred with the unit. This indicator is amber when the Fibre Channel to SCSI router detects a fault condition. Faults can occur as a result of Power On Self Test (POST) failure or operational failures. It is normal for this indicator to flash on when the unit is powered up or reset. If the fault indicator stays lit, contact your service provider.
- Fibre Channel (Lnk/Act)—When lit green, the upper indicator signifies a good Fibre Channel link on the port. When lit green, the lower indicator signifies Fibre Channel port activity. If the Link indicator fails to light at all or if the Activity indicator stays continually lit without corresponding SCSI bus activity, there might be a problem with the Fibre Channel configuration. Verify the Fibre Channel configuration.
- SCSI Bus (0, 1)—When lit green, the upper indicator signifies a good Fibre Channel link on the port. When lit green, the lower indicator signifies Fibre Channel port activity. If the Link indicator fails to light at all or if the Activity indicator stays continually lit without corresponding SCSI bus activity, there might be a problem with the Fibre Channel configuration. Verify the Fibre Channel configuration.

6
Hardware Replacement Procedures

This section includes:

Tape Drive and Fibre Channel to SCSI Router Replacement	6-1

Tape Drive and Fibre Channel to SCSI Router Replacement

These procedures can be done for any tape drive that is connected to the Fibre Channel to SCSI router. For information about what tape drives can be connected to a Fibre Channel to SCSI router, see Supported Storage Devices on page 1-3. In these procedures the N1525A tape drive is used.

Tape Drive Replacement

1. Perform a forced reset on the tape drive in SCF by entering in the following command:

   ```
   SCF> RESET TAPE1, FORCED
   ```

2. Power off the tape drive by pressing the power switch. For the location, see Figure 6-1.

Figure 6-1. Location of the Power Switch on the Tape Drive

3. Unplug the power cord from the AC power outlet, and then unplug the other end from the tape drive's AC power receptacle.
4. Disconnect the SCSI cable from port 1 by unscrewing the screws by hand. Do not use a screwdriver.
5. Disconnect the differential terminator from port 2 by unscrewing the screws by hand. Do not use a screwdriver.
6. Place the old tape drive aside.
7. Connect the new tape drive. Refer to section 3 Installing the Fibre Channel to SCSI Router for the NonStop NS-Series Server when installing a new tape drive.
8. Power cycle the Fibre Channel to SCSI router by powering it off and then on.
9. Start the tape drive in SCF by entering in the following command:

```
SCF> START TAPE $TAPE1
```

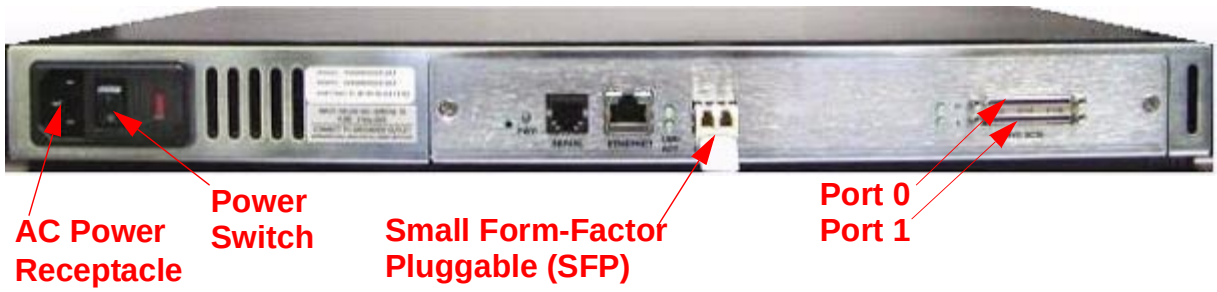
Fibre Channel to SCSI Router Replacement

1. Perform a forced reset on the tape drive in SCF by entering in the following command:

```
SCF> RESET TAPE1, FORCED
```

2. Power off the tape drive by pressing the power switch. See Figure 6-1 for the location.
3. Power off the Fibre Channel to SCSI router.
4. Unplug the power cord from the AC power outlet, and then unplug the other end from the AC power receptacle on the Fibre Channel to SCSI router.
5. Disconnect the fiber cable from the small form-factor pluggable (SFP) on the unit.

Figure 6-2. Rear View of the Fibre Channel to SCSI Router



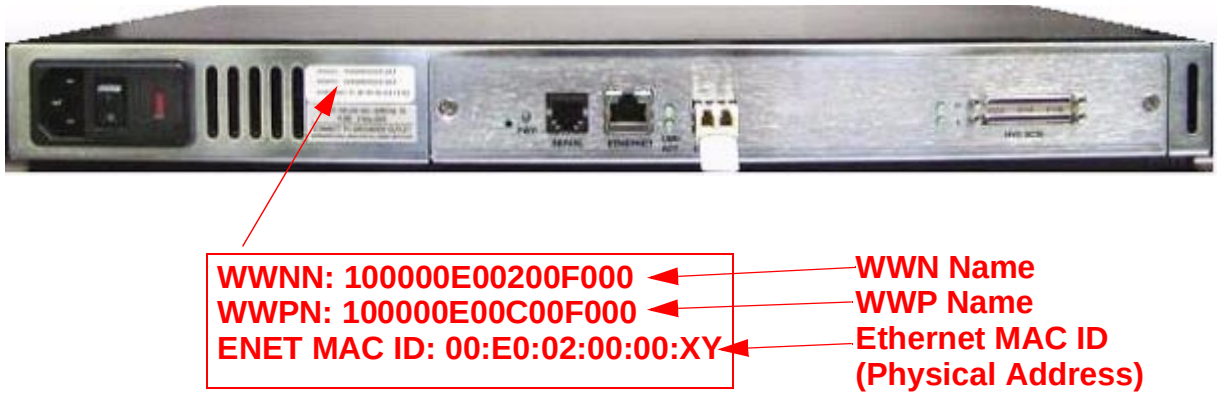
6. Disconnect the SCSI cable from the Fibre Channel to SCSI router on port 0. If there is another tape drive connected to port 1, disconnect that device also.

7. Place the old Fibre Channel to SCSI router aside.
8. Install the new Fibre Channel to SCSI router. Refer to section 3 Installing the Fibre Channel to SCSI Router for the NonStop NS-Series Server when installing a new Fibre Channel to SCSI router.
9. Enter in the following SCF command:

   ```
   SCF> ALTER TAPE TAPE1, WWN 100000E00200F00
   ```

   The WWN (Worldwide Name) is on the rear of the Fibre Channel to SCSI Router as shown in Figure 6-3 on page 6-3.

Figure 6-3. Rear View of the Fibre Channel Router



10. Power on the tape drive. See Figure 6-1 on page 6-1 for the power switch location. Then wait for it to perform its power-on-self-test (POST).
11. Start the tape drive in SCF by entering in the following command:

    ```
    SCF> START TAPE $TAPE1
    ```

A Product Specifications

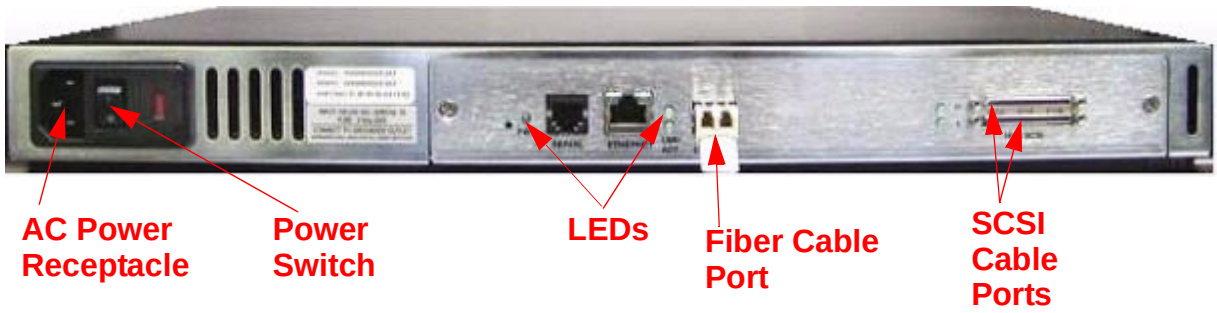
Fibre Channel to SCSI Router

Figure A-1. Fibre Channel to SCSI Router

Table A-1. Dimensions of the Fibre Channel to SCSI Router

Specification	Value
Weight	9 pounds (4 kilograms)
Width	17 inches (43 centimeters)
Height	1.72 inches (4.4 centimeters)
Depth	10.75 inches (27 centimeters)

Figure A-2. Rear Panel Components



Power Requirements

▲ **WARNING.** The Fibre Channel to SCSI router does not have protection against lightning surges. For this reason, for customers in a high risk area, use external surge protection rated for use in your location and be able to handle the power requirements of the tape drive enclosure.

Power

- 100 to 240 V ac, auto sensing
- 50/60 Hertz, 1.0 ampere

Physical Specifications

- Internal power supply with detachable power cord
- Fibre Channel link status and activity LEDs
- SCSI bus activity LEDs
- Power/Fault LED
- Air flow with internal fan
- Rackmount or desktop enclosure
- Power switch

Operating Environment

- 0 to 50 degrees celsius
- 5 to 80 percent relative humidity (noncondensing)

Non-operating Environment

- -40 to +55 degrees celsius
- 0 to 92 percent relative humidity (noncondensing)

Connection Supported

The only connection supported is a Fibre Channel ServerNet adapter (FCSA) on a NonStop NS-series server.

B Using the Serial Interface

This section describes specific configuration options available for the serial interface.

The Fibre Channel to SCSI router allows the user to access Ethernet configuration settings through the serial interface.

Serial Port Connection

The RJ-11 connector on the back panel of the Fibre Channel to SCSI router provides a serial port that is compatible with RS-232 signaling levels. The Fibre Channel to SCSI router is designed to communicate with a terminal or any operating system utilizing a terminal emulator. The baud rate, data bits, stop bits, parity, and flow control of both the router and the host system must use the same settings. The autobaud feature described in the next subsection provides an effective method to set the baud rate of the router and host system.

Figure B-1. Fibre Channel to SCSI Router Serial Port

Autobaud Feature

The autobaud feature automatically configures the baud rate on the Fibre Channel to SCSI router. Once you set the baud rate in the terminal emulator, wait until the Fibre Channel to SCSI router completes the power-on self test (POST) and then the Firmware Initialization process. This can take up to 90 seconds, during which time the POST and initialization information might or might not be visible on the terminal or terminal emulator. After this process has completed, press the Enter key slowly 7 or 8 times (or type shift-z) and the Fibre Channel to SCSI router automatically detects the baud rate being used by the serial port. The baud rate is then saved in the Fibre Channel to SCSI router's configuration and is retained through future power cycles.

Note. Pressing the Enter key before the POST has completed is of no benefit to the autobaud feature. Wait until both the POST and the Firmware Initialization processes have completed before pressing the Enter key. This might take up to 90 seconds.

The baud rate used by the terminal or terminal emulator must be 9600, 19200, 38400, 57600, or 115200 for the autobaud feature to recognize it. The Fibre Channel to SCSI router does not function properly at any other baud rate.

Setting Up Serial Port Communications

Leave the Fibre Channel to SCSI router turned off until you have set up the serial port communications on your host computer unless serial I/O was previously established and is currently running.

The Fibre Channel to SCSI router is designed to communicate with a terminal or any operating system utilizing a terminal emulator. For example, Windows 9x, NT 4.0, or 2000 operating systems can use hyper terminal. Check that the baud rate, data bits, stop bits, parity, and flow control are set correctly.

To set up serial communications with the Fibre Channel to SCSI router:

1. Leave power to the router turned off until you have set up the serial port communications on your host terminal.
2. Plug the serial cable into one of the host computer's serial ports (COM1 or COM2), and then plug the other end of the serial cable into the router's serial port.
3. Start the terminal emulator.
4. Set the terminal emulator to use the appropriate COM port.

Note. Auto Detect or VT100 are the recommended settings for Windows Hyper Terminal emulation type.

---

5. Specify these settings for the port:

Baud rate:	9600, 19200, 38400, 57600, or 115200 (Autobaud recognizes only these baud rates.)
Data bits:	8
Stop bits:	1
Parity:	None
Flow control:	None or XON/XOFF

Note. Before initially powering on the Fibre Channel to SCSI router, check that all the Fibre Channel and SCSI devices are powered on first and that they have finished performing their self tests. This approach helps ensure that device discovery works correctly.

Ethernet Configuration

This option allows for setting up all Ethernet network settings, including IP address, Subnet mask, IP gateway, SNMP and security settings, Ethernet mode, physical address, and host name.

Figure B-2. Ethernet Configuration Menu

```
                        Ethernet Configuration Menu
                  X.XX.XX XXXXXX XXXXXX-XXX_XXXXXXXXXXXXXX
                            01/06/2003 08:56:22

IP Address                      : 192.231.36.101
Subnet Mask                     : 255.255.255.0
IP Gateway                      : 0.0.0.0
Ethernet Physical Address       : 08:06:07:05:03:09
Ethernet Mode                   : 10/100Mbps (Auto-Neg)
Hostname                        :
DHCP Configuration              : Disabled

1) Change IP Address
2) Change IP Subnet Mask
3) Change IP Gateway
4) Change Ethernet Physical Address
5) Toggle Ethernet Mode
6) Change Hostname
7) Toggle DHCP Configuration
8) Change SNMP Settings
9) Change Security Settings

X) Return to previous menu
```

- Select **1** to change the IP address of the Fibre Channel to SCSI router. The default for this setting is **192.231.36.101**.
- Select **2** to change the IP subnet mask for the Fibre Channel to SCSI router. The default for this setting is 255.255.255.0.
- Select **3** to change the IP gateway for the Ethernet network of the Fibre Channel to SCSI router.
- Select **4** to change the Ethernet physical address, or MAC address, of the Fibre Channel to SCSI router. Ethernet physical addresses are always assigned to Ethernet adapters by the manufacturers.

- Select **5** to toggle the Ethernet mode among these options:

```
10Mbps Only
100Mbps (half duplex) Only
100Mbps (full duplex) Only
10/100Mbps  (Auto-Neg.)
```

- Select **6** to change the hostname. This alphanumeric entry is one word up to eight characters long.

Note. Do not use an uppercase Z as a part of the hostname as it is the autobaud hot key used by the Microsoft Windows hyper terminal utility for serial connections.

Select **7** to toggle the DHCP setting. This setting enables and disables support for the Dynamic Host Configuration Protocol. When enabled, the router retrieves a dynamic IP address from a DHCP server located on the Ethernet network that the Fibre Channel to SCSI router is connected to.

Once DHCP is enabled, **save** the current configuration and **reboot** the router before an IP address can be requested from the DHCP server:

1. Select **X** Return to previous menu.
2. Select **A** Save Configuration.
3. Select **X** Return to previous menu.
4. Select **4** Reboot.

After the router reboots, the Main menu appears on the serial interface. For Telnet, a new session needs to be opened to continue configuring the router. DHCP status can be verified from the Ethernet Configuration Menu where DHCP Configuration is indicated as Enabled if DHCP has been successfully activated. The IP address might also appear different than the former non-DHCP IP address.

Note. To use the DHCP feature, a DHCP server must be operational on the Ethernet network used by the Fibre Channel to SCSI router. If the DHCP feature is used when there is no DHCP server, the standard for DHCP requires that the router wait three minutes for a response from a DHCP server before timing out.

Your DHCP server might allow you to set up a lease reservation for an IP address by providing the server with the Ethernet MAC address of the Fibre Channel to SCSI router. This sets the DHCP server to always provide the same IP address to the Fibre Channel to SCSI router. This setup can be useful for remote management of the router via Telnet or Crossroads Visual Manager. Because the method of setting up a lease reservation varies depending on the DHCP server being used, you should contact your network administrator for assistance.

- Select **8** to access the SNMP Settings for the Fibre Channel to SCSI router, including the community names for GET and SET as well as SNMP Trap settings. For Trap settings, select the IP address of the device to send the SNMP trap notifications.

- Select **9** to change security settings, including the user name and password. User names and passwords should be unique and kept confidential. Use a combination of letters and numbers when creating user names and passwords.

C

Configuring OSM for Monitoring the Fibre Channel to SCSI Router

This section includes the steps that are needed to configure OSM so that it can monitor the Fibre Channel to SCSI router.

To configure OSM for monitoring the router complete these three basic steps:

1. Connect the router to the LAN connection on the system.
2. Configure the router's IP address, user name, and password.
3. Configure the router for OSM monitoring.

You need these components:

- A M8201R Fibre Channel to SCSI router
- A system console with a hyper terminal installed
- A serial cable
- A system console with a serial cable port

Connecting the Hardware

To connect the router to the LAN connection on the system, make these connections to the Fibre Channel to SCSI router:

1. Connect the router to the FCSA on the system by using a fiber-optic cable.
2. Connect the tape drive to the router by using a SCSI cable.

Note. For more information on connecting the router and tape drive to the system, see Installing the Fibre Channel to SCSI Router for the NonStop NS-Series Server on page 3-1.

---

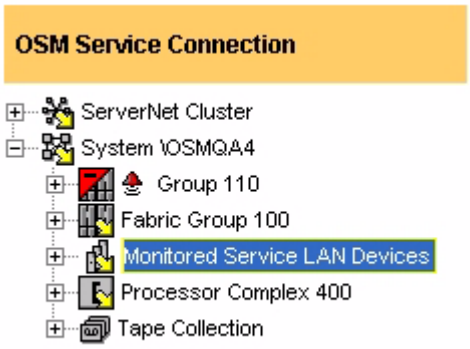
3. Connect a serial cable to the system, and then connect the other end of the cable to the serial port on the router.

Note. For more information on connecting the serial cable to the system, see Using the Serial Interface on page B-1.

Configuring the Fiber Channel to SCSI Router for OSM Monitoring

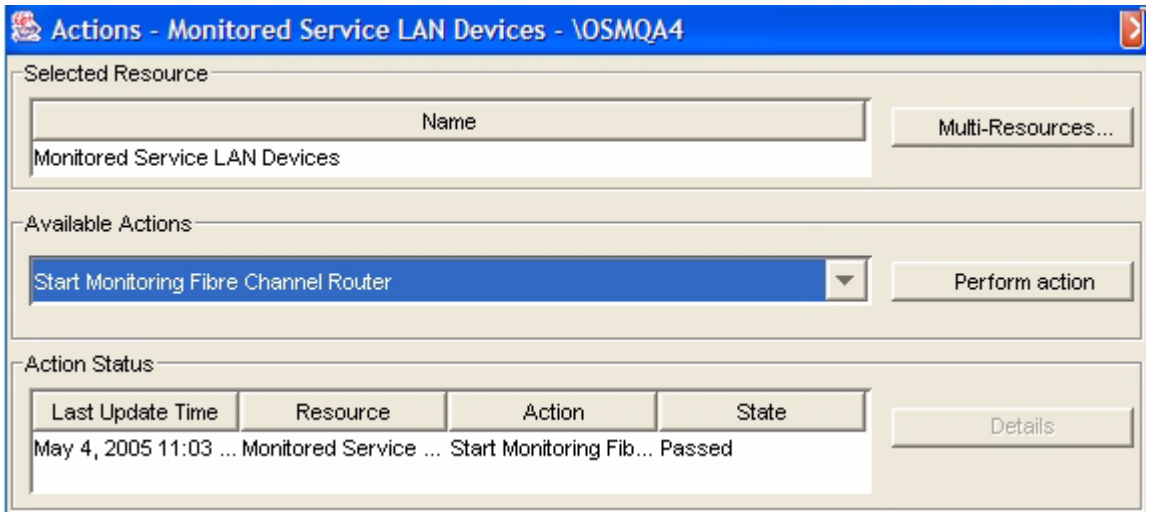
1. Open a web browser on the system.
2. Start OSM.
3. On the tree view, right-click on **Monitor Service Lan Devices** and select **actions**.

Figure C-1. OSM Tree View



4. Select **Start Monitoring Fibre Channel Router** and then click on the **Perform action** button. See Figure C-2.

Figure C-2. Actions Dialog Box



5. A small window appears and prompts you for:
   a. Router's user name (default user name = "root")
   b. Router's password (default password = "root")
   c. Router's IP address (default IP address = "192.231.36.101")
   d. Name (can be any alphanumeric string to logically identify the device)

For more help on attributes and actions of the router on OSM, see OSM Online Help (F1).

Safety and Compliance

Regulatory Compliance Statements

The following regulatory compliance statements apply to the products documented by this manual.

Consumer Safety Statements

FCC Compliance

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Any changes or modifications not expressly approved by Hewlett Packard Company could avoid the user's authority to operate this equipment.

CISPR Compliance

This equipment complies with the requirements of CISPR 22 (EN 55 022) for Class A Information Technology Equipment (ITE). In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Canadian Compliance

This class A digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règelment sur le matériel brouilleur du Canada.

Taiwan (BSMI) Compliance

警告使用者:

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

JAPAN (VCCI) Compliance

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This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may occur, in which case, the user may be required to take corrective actions.

DECLARATION OF CONFORMITY

Supplier Name:	**Hewlett Packard Company**	
Supplier Address	**Hewlett Packard Company** Nonstop Enterprise Division 10300 North Tantau Avenue Cupertino, California 95014	**Represented in the EU By:** **Hewlett Packard Company** P.O. Box 81 02 44 81902 Munich Germany

Declares under our sole responsibility that the following product

Product Name:	**Fibre Channel to SCSI Router**
Regulatory Model:	**N.A.**
Product Model:	**M8201R**

Conforms to the following normative European and International Standards

Product Safety:	**EN 60950:1995 (IEC 950 2nd Edition)**
Electromatic Compatibility	**EN 55022:1998 - Radiated & Conducted Emissions**
	EN 61000 - 3 - 2:1995 - Harmonic Current Emissions
	EN 61000 - 3 - 3:1995 - Voltage Fluctuation and Flicker
	EN 55024:1998 - EMC Immunity

Following the provisions of the normative European Council Directives:

EMC Directive 89/336/EEC (including amendments)

Low Voltage Directive 73/23/EEC (amended by 93/68/EEC)

Supplementary Information:

Safety:	**Protection Class I, Pollution Degree II**
Emissions:	**EMC Class A**

Year Assessed / First Production: 2002

Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment at Hewlett Packard's compliance laboratories in Cupertino, California or at accredited laboratories accepted by European Union Notified and Competent Bodies.

Chuck Denning
Manager, Hardware Product Assurance
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Cupertino, California

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